

Montana Board of Oil and Gas Conservation Environmental Assessment

Operator: Slawson Exploration Company, Inc.
Well Name/Number: Dragonfly #1-36H
Location: NE NE Section 36 T23N R54E
County: Richland, MT; Field (or Wildcat) Wildcat

Air Quality

(possible concerns)

Long drilling time: No, 25-35 days drilling time.

Unusually deep drilling (high horsepower rig): Triple derrick rig to drill a single lateral horizontal Bakken Formation test, 14,136'MD/10,023'TVD.

Possible H₂S gas production: Slight chance H₂S gas from Mississippian Formations.

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:

- ☒ Air quality permit (AQB review)
- ☐ Gas plants/pipelines available for sour gas
- ☐ Special equipment/procedures requirements
- ☐ Other: _____

Comments: Triple derrick drilling rig to drill a single lateral horizontal Bakken Formation test, 14,136'MD/10,023'TVD. If there is an existing pipeline for gas in the area and gas can be gathered or if no gathering system nearby gas can be flared under Board Rule 36.22.1220.

Water Quality

(possible concerns)

Salt/oil based mud: Yes to intermediate string hole to be drilled with oil based invert drilling fluids. Horizontal lateral will be drilled with oil based invert drilling fluids. Surface casing hole will use freshwater and freshwater mud system.

High water table: No high water table anticipated.

Surface drainage leads to live water: Yes, surface drainage lead to live water, Fox Lake. Closest drainage is an unnamed ephemeral tributary drainage to Fox Creek, about 1/8 of a mile to the west and about 1/4 of a mile to the southwest from this location. Fox Lake is about 3.5 miles to the southwest from this location.

Water well contamination: None, closest water wells are about 7/8 of a mile to the northeast and all other water wells are 1 mile and further from this location. Depth of these stock/domestic water wells range from 30' to 425'. 1550' of surface casing, as listed on the permit to drill application is insufficient casing to cover the base of the Fox Hills Formation. Surface casing hole should be drilled to 1703' and run 1703' of steel surface casing and cement it to surface.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No, Class I stream drainages.

Mitigation:

- ☐ Lined reserve pit
- ☒ Adequate surface casing
- ☐ Berms/dykes, re-routed drainage
- ☒ Closed mud system
- ☒ Off-site disposal of solids/liquids (in approved facility)
- ☒ Other: Lined cuttings pit.

Comments: 1703' surface casing well below freshwater zones in adjacent water wells. Also, covering Fox Hills aquifer. Adequate surface casing and operational BOP equipment will prevent any problems.

Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: None anticipated, crossing only ephemeral drainages.

High erosion potential: No this location has a low erosion potential due to a small cut and fill, location needs a small cut, up to 2.1' and a small fill, up to 2.2', required.

Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, large well site 450'X405', designed as a dual well location for the Dragonfly 1-36H and the Hornet #1-25H.

Damage to improvements: Slight, surface use is grassland.

Conflict with existing land use/values: Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other: Requires DEQ General Permit for Storm Water Discharge Associated with Construction Activity, under ARM 17.30.1102(28).

Comments: Access will be over existing state highway, #200. Operator will construct about 10,697' of new access road into this location from the existing state highway. Oil based invert drilling fluids will be recycled. Completion fluids will be trucked to a Class II disposal. Operator will utilize a closed loop mud system. Cuttings and mud solids will be disposed of in the lined cuttings pit and solidified. No concerns.

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Closest residences are about 1.5 of a mile to the south southwest and about 2.0 miles to northwest from this location.

Possibility of H2S: Slight chance H2S gas from Mississippian Formations.

Size of rig/length of drilling time: Triple drilling rig 25 to 35 days drilling time.

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: Adequate surface casing cemented to surface with a working BOP stack should mitigate any problems.

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: No, none.

Conflict with game range/refuge management: No, none.

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover. Candidate species are the Sprague's Pipit and the Greater Sage Grouse. NH tracker website indicates zero (0) species of concern in this area. NH Tracker website indicates three (3) Potential Species of Concern: Hayden's Shrew, Eastern Screech-Owl and Tennessee Warbler.

Mitigation:

- ☐ Avoidance (topographic tolerance/exception)
☒ Other agency review (DFWP, federal agencies, DSL)
☐ Screening/fencing of pits, drillsite
☐ Other: _____

Comments: State of Montana "Trust Lands". Trust Lands will do surface EA.

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites: None identified

Mitigation

- ☐ avoidance (topographic tolerance, location exception)
☒ other agency review (SHPO, DSL, federal agencies)
☐ Other: _____

Comments: State of Montana "Trust Lands". Trust Lands will do surface EA.

Social/Economic

(possible concerns)

- ☐ Substantial effect on tax base
☐ Create demand for new governmental services
☐ Population increase or relocation

Comments: No concerns.

Remarks or Special Concerns for this site

Single lateral horizontal Bakken Formation test 14,136'MD/10,023'TVD.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/ Steven Sasaki

(title): Chief Field Inspector

Date: May 17, 2012

Other Persons Contacted:

Bureau of Mines and Geology, GWIC website

(Name and Agency)

Water wells in Richland County, Montana

(subject discussed)

May 17, 2012 _____
(date)

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA
COUNTIES, Richland County
(subject discussed)

May 17, 2012 _____
(date)

Montana Natural Heritage Program Website
(Name and Agency)
Heritage State Rank= S1, S2, S3 T23N R54E
(subject discussed)

May 17, 2012 _____
(date)

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____